

**B. ARCH. FOURTH YEAR SECOND SEMESTER – 20....
SERVICES & EQUIPMENT – III (Arch/T/424)**

Time 3 hrs

Full Marks: 100

Part I (Each part carrying 50 marks)

Answer any five questions

Q1.

- A. Mention different types of filaments lamps. Explain the procedures considered to improve performances of filament lamps. [2+4]
- B. Which type of light source is preferred for better colour rendering and why ? [2+2]

Q2.

- A. Write down the differences between incandescence and fluorescence. [3]
- B. What do you mean by HID light source? Where those are used? [3]
- C. Mention the basic requirements of Luminaires [4]

Q3.

- A. Mention different types of fixtures based on their mounting locations. [4]
- B. Write a short note on different lighting system possible for indoor application. [4]
- C. What do you mean by a Recessed luminaire [2]

Q4.

- A. Mention additive & Subtractive primary colours. [2]
- B. A room of 12m X 12m dimension required to be uniformly illuminated with average illumination level of 80 lux. Consider maintenance factor to be 0.8 and Coefficient of utilization of 0.5, lamp efficiency 14.75 lumen/Watt. Find required number of Light sources and required spacing arrangements for their mounting. [8]

Q5.

- A. Mention working principle of a fluorescent lamp. [4]
- B. A 5 meter wide circular track of outer diameter 50 meter is illuminated by a centrally placed luminaire emitting 10000 candela in all directions towards the track. If mounting height is 50 meter, calculate average illuminance on the track. [6]

Q6.

- A. Write a short note on chromaticity diagram. [4]
- B. Calculate illuminance at a point 5 feet below the centre of an 8 foot fluorescent luminaire with intensities as given below. [6]

Angle	Intensity (cd)	Angle	Intensity (cd)
0	4000	20	3679
2.5	3989	22.5	3592
5	3975	25	3496
7.5	3951	27.5	3398
10	3913	30	3292
2.5	3863	32.5	3169
15	3812	35	3045
17.5	3745		